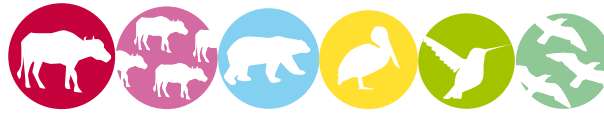


GOLD STANDARD PASSPORT

GOLD STANDARD PASSPORT

CONTENTS



- A. Project title**
- B. Project description**
- C. Proof of project eligibility**
- D. Unique Project Identification**
- E. Outcome stakeholder consultation process**
- F. Outcome sustainability assessment**
- G. Sustainability monitoring plan**



- H. Additionality and conservativeness deviations**



- Annex 1 ODA declarations**

GOLD STANDARD PASSPORT

SECTION A. Project Title

Shri Bajrang RE Project

UNFCCC Ref no: 2128

<http://cdm.unfccc.int/Projects/DB/DNV-CUK1218608941.53/view>

SECTION B. Project description

The CDM project activity is undertaken by Shri Bajrang Power and Ispat Ltd at its sponge iron plant. The project activity is a biomass based power plant next to an existing power plant in Chhattisgarh, India. The power plant utilise rice husk a renewable biomass as the primary fuel for the generation of electricity for captive use and the surplus if any, is exported to the grid.

The project involves the installation of a high pressure boiler (67 kg/cm², 490⁰C, 60 tonnes per hour capacity) and condensing turbine generator of 8MW power generation capacity. The 8 MW turbine generator will only use 36 tonnes per hour of steam from the boiler. However, the analysis has been done considering the entire 60 tonnes per hour of steam. The project activity is expected to generate about 7.4MW of electrical power after considering auxiliary consumption. The power will be used on-site for captive purpose and surplus if any will be exported to the Chhattisgarh State Electricity Board (NEWNE grid¹) at 132 kV through the local substation. The existing plant has two (8MW and 10MW) condensing turbine generators, which were commissioned as part of a WHR based CDM project through which power generated is being utilized for captive purpose and surplus if any, is exported to the Chhattisgarh grid.

The generation of renewable electricity will also reduce the dependence on existing and planned fossil fuel based generation. Chhattisgarh is heavily dependent on coal with less than 10% of generation sourced from non-fossil fuels (hydro). Thus, the project will have a positive impact not only through the reduction in emissions of greenhouse gases associated with such generation, which is predominantly coal based (see section on determination of the baseline), but also through a reduction in the emissions of other harmful gases (NO_x and SO_x) that arise from the combustion of coal.

¹ August 2006 North and East grids were interconnected thereby 4 regional grids Northern, Eastern, Western and North Eastern grids are synchronously connected forming central grid operating at one frequency. On 31st December 2013, Southern Region was connected to Central Grid in Synchronous mode with the commissioning of 765kV Raichur-Solapur Transmission line thereby achieving 'ONE NATION'-'ONE GRID'-'ONE FREQUENCY'.

GOLD STANDARD PASSPORT






Estimated start date of project:

- 27/06/2006 - Date of board resolution considering CDM revenues at the development stage of the project.
- The project activity commissioned (synchronized with grid) on 13/08/2008 and the commercial operation started on 01/09/2008.

SECTION C. Proof of project eligibility

C.1. Scale of the Project

Please tick where applicable:

Project Type	Large	Small
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

	<input type="checkbox"/>
---	--------------------------

C.2. Host Country

India

GOLD STANDARD PASSPORT

C.3. Project Type

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	✓	<input type="checkbox"/>
Does your project activity classify as an End-use Energy Efficiency Improvement project?	<input type="checkbox"/>	✓

Please justify the eligibility of your project activity:

The project is eligible under Renewable Energy Supply.

Project Types and Eligibility Criteria: Electricity and/or heat, and liquid biofuels from biomass resources

Project type and eligibility criteria as per GS Annex C	Justification of eligibility of project
Activities making use of non-renewable biomass resources shall NOT be eligible for Gold Standard registration. Project Participants shall therefore provide convincing evidence that the project activities make use of renewable biomass resources . This criteria shall be monitored along the crediting period and therefore be included in the Sustainability Monitoring Plan.	The project activity make use of renewable biomass resources (agricultural residue – rice husk)
Activities expected to make use of biomass resources already in use shall NOT be eligible for Gold Standard registration unless convincing evidence is provided showing that the current users are in agreement with the envisioned shift of use (potential leakage associated to such a shift must be taken into account). In the absence of such an agreement, Project Participants shall demonstrate that their project makes use of surplus biomass for each type of biomass resources used. They must do so once, ex-ante on time for validation for small-scale activities, and in time for validation	As per the methodological tool “Leakage in biomass small-scale project activities”, version 04.0, for competitive uses of biomass, the project participant shall evaluate ex ante if there is a surplus of the biomass in the region of the project activity, which is not utilised. If it is demonstrated (e.g., using published literature, official reports, surveys etc.) at the beginning of each crediting period that the quantity of available biomass in the region (e.g., 50 km radius), is at least 25% larger than the quantity of biomass that is utilised including the project activity, then this source of leakage can be neglected

GOLD STANDARD PASSPORT

<p>and for each one of the verifications (inclusion in the Sustainability Monitoring Plan) for large--scale activities</p>	<p>otherwise this leakage shall be estimated and deducted from the emission reductions.</p> <p>Approach L2 is used to assess the leakage effects from the project activity. The surplus availability of the biomass (25% larger than the quantity of biomass that is utilized including the project activity) has been established with the biomass survey conducted for the year 2014-15 by M/s MCJ Energy Engineers (P) Ltd covering the 100 km radius from the project activity. The biomass assessment survey shows the 36.88% surplus availability of biomass. Hence the leakage emissions from the project activity for the monitoring period are taken as zero.</p>
<p>Project Participants shall demonstrate that their activity will only make use of degraded land and shall include this criterion in the Sustainability Monitoring Plan. Two exceptions may be considered: convincing evidence is provided showing that the envisioned energy crop is part of a traditional rotational cropping, OR an increase of the productivity is obtained, locally and to the benefit of the current users, through measures implemented in the context of the activity so as to at a minimum compensate for the part of the land newly allocated to growing the energy crop. Compliance with these criteria above must be monitored over the crediting period and thus be part of the Sustainability Monitoring Plan</p>	<p>The biomass used is an agricultural residue and not derived from a dedicated energy crop.</p>
<p>Activities making use of GMOs shall declare so in a transparent way. Local stakeholders opinion on GMOs shall prevail and appropriate mitigation measures shall be put in place to address their concerns, if any, in a satisfactory way</p>	<p>No GMOs are used.</p>

Pre Announcement	Yes	No
Was your project previously announced?	<input type="checkbox"/>	✓
Explain your statement on pre announcement		

GOLD STANDARD PASSPORT

The project activity is registered with United Nations Framework Convention on Climate Change. The project has not participated under any other GHG program.

The MOM of the board of directors of Shri Bajrang Power and Ispat Ltd. dated 27 June 2006 considered the CDM benefits were considered during the decision for implementation of the project activity. The project proponent had approached the CDM consultants on 20 March 2006 to undertake the project as a CDM activity and the firm contract with the consultant was established on 7 June 2007. The DoE was appointed on 5 September 2007.

C.4. Greenhouse gas

Greenhouse Gas	
Carbon dioxide	✓
Methane	<input type="checkbox"/>
Nitrous oxide	<input type="checkbox"/>

C.5. Project Registration Type

Project Registration Type	
Regular	<input type="checkbox"/>

Pre-feasibility assessment	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	✓	<input type="checkbox"/>	<input type="checkbox"/>

If Retroactive, please indicate Start Date of project activity:

The project activity commissioned (synchronized with grid) on 13/08/2008 and the commercial operation started on 01/09/2008.

GOLD STANDARD PASSPORT

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

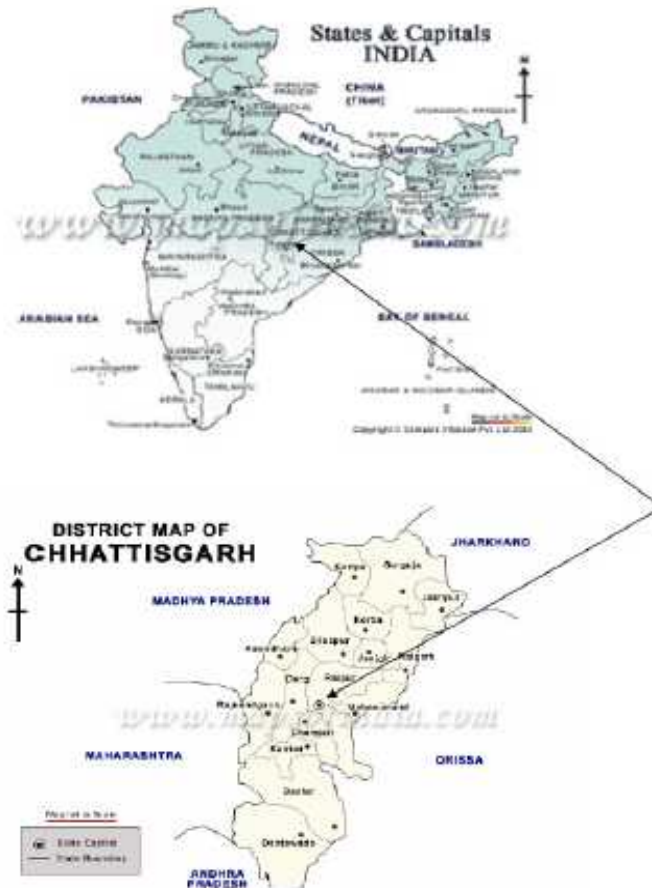
	Coordinates
Latitude	21°18'30.8" N (21.3085)
Longitude	81°35'6.8"E (81.5852)



Explain given coordinates

NA – the given coordinates are sufficient for unique project identification

D.2. Map



Physical address of the plant:

Village Borjhara village of Raipur district, Chhattisgarh, India

GOLD STANDARD PASSPORT

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

An EIA was not carried out for the project activity as the environmental impact assessment is not required for this project activity.

The stakeholder review has been conducted at the following levels:

- A local stakeholder review
- A national stakeholder review which will be undertaken through the approval by the Ministry of Environment and Forests (the Indian DNA) and consent to operate from the Chhattisgarh Pollution Control Board.

The institutions are already in place for the national and international stakeholder review and any comments arising from these processes will be incorporated prior to registration. The project will be submitted to the Indian designated national authority (the Ministry of Environment and Forests) for the approval.

The “*Municipal Corporation Birgaon, Raipur*” (a locally elected representative) has been approached and informed of the project, the necessary permissions have been issued. A notice was published in the local daily “Samvet Shikhar” on 16/6/2007 informing local stakeholders in the region about the project activity.

Other stakeholders that have been notified of the project, through consents and approvals required for the investment, are the Chhattisgarh State Electricity Board, the Chhattisgarh Renewable Energy Development Authority, the Ministry of Commerce and Industry, the State Boiler and State Electrical Inspectorate. These parties have approved the project and provided the necessary approvals required to date.

According to the modalities for the Validation of CDM projects, the Validator shall make publicly available the project design document and receive, within 30 days; comments from Parties, stakeholders, and UNFCCC accredited non-governmental organisations and make them publicly available.

The PDD of 8 September 2007 was made publicly available on UNFCCC website and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 21 September 2007 to 20 October 2007. No Comments were received.

E.2. Stakeholder Feedback Round

GOLD STANDARD PASSPORT

Please describe report how the feedback round was organised, what the outcomes were and how you followed up on the feedback.

As highlighted above, the stakeholder feedback round consisted of notices in local newspapers and internationally via the UNFCCC website. A formal stakeholder meeting was held on 04 July .2007 and no adverse comments were received on the project.

GOLD STANDARD PASSPORT

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

The Project has been analysed against the Safeguarding Principles (SP) as listed in Annex H of the Toolkit; there are no principles deemed relevant for this project activity. There are no additional relevant critical issues for the project type that have not already been address in this GS passport.

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
Human Rights			
1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	Shri Bajrang Power and Ispat Ltd. respects all internationally proclaimed human rights. The project is located at its sponge iron plant and hence no additional land is required for its construction. The project is not complicit in Human Rights abuses.	Low	No need as low risk
2. The project does not involve and is not complicit in involuntary resettlement.	As per above, no new land is required for the project.	Low	No need as low risk
3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.	As per above, no new land is required for the project.	Low	No need as low risk
Labour Standards			

GOLD STANDARD PASSPORT

4. The Project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.	If the employees wish, they have the freedom of association, and their rights to collective bargaining are not restricted.	Low	No need for low risk
5. The Project does not involve and complicit in any form of forced or compulsory labour.	All staff are employed according to national labour law and the project does not involve any forced or compulsory labour.	Low	No need for low risk
6. The Project does not employ and is not complicit in any form of child labour.	The project does not involve any child labour and is in compliance with the relevant national regulation	Low	No need for low risk
7. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	The project does not discriminate against individuals and employment of staffs is not based on gender, race, religion, sexual orientation or on any other basis.	Low	No need for low risk
8. The Project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe and unhealthy work environments.	India has regulations on measures to ensure safety at workplace.	Low	No need for low risk
Environmental Protection			
9. The Project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary	The project has followed a precautionary principle – stakeholder participation and the CDM requirements further ensure	Low	No need for low risk

GOLD STANDARD PASSPORT

principles.	approach is followed.		
10. The Project does not involve and is complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognised as protected by traditional local communities	As the project boundary doesn't include natural habitats the project activity is not result in conversion of critical natural habitats.	Low	No need for low risk
Anti-corruption			
11. The Project does not involve and is not complicit in corruption.	Shri Bajrang Power and Ispat Ltd. has a code of conduct that explicitly forbids such behaviour.	Low	No need for low risk

F.2. Sustainable Development matrix

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development.	If relevant copy mitigation measure from "do no harm" – table, or include mitigation measure used to neutralise a score of ‘-‘	Check www.undp.or/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	Negative impact: score ‘-‘ in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact:

GOLD STANDARD PASSPORT

				score '+'
Air quality			<p>Parameter: emission of NOx and SOx, dust</p> <p>Air quality will be improved substantially compared to emission levels (SOx and NOx) related to fossil fuel combustion for producing electricity. Electricity generation in India is still predominantly based on coal. In general, using coal for electricity generation emits more SOx, NOx and ash compared with biomass (ash content of rice husk is of the order of 10-20% whilst Indian coal typically has an ash content of 35%). The plant will install an electrostatic precipitator at the exit of the boiler to limit suspended particulate matter in the flue gases to less than 50 mg/Nm³.</p> <p>Monitoring of air and water quality will be undertaken on a regular basis as per PCB guidelines after the plant is commissioned.</p> <p>As such, the project has a positive impact on air quality.</p>	+
Water quality and quantity			<p>Parameter: water pollutants and contamination to public water resources</p> <p>Water quality and quantity from biomass power generation are the same in compared to baseline scenario. The waste water from the power plant will be treated and once treated will meet the norms as</p>	0

GOLD STANDARD PASSPORT

Soil condition			<p>stipulated by the Pollution Control Board. Treated water shall be used for plantation purpose. No water discharge will be outside the plant area. There will also investment in waste water systems to treat the water de-mineralisation plant effluent and also the blow down water from the cooling tower and steam generator.</p> <p>The project will have no impact on soil.</p>	0
Other pollutants			<p>Parameter: level of noise</p> <p>Noise level during operation does not result in an impact compared to the baseline. Moreover, the project is situated with a sponge and iron plant and additional noise will be minimal. Plantation shall be done to check noise pollution.</p>	0
Biodiversity			<p>Parameter: Change in fauna and flora</p> <p>There is no significant change to fauna or flora before or after the project. Since the project only used agricultural residues, there is no danger of biodiversity loss through unsustainable biomass production or use.</p>	0
Quality of employment			<p>Parameter: change in skilled employment and training</p> <p>The project makes a significant contribution to development as any rurally based industry in India provides an important source of direct employment to the surrounding area. The project will help in opening up new business opportunities for the biomass suppliers.</p> <p>The plant is expected to increase employment for skilled</p>	+

GOLD STANDARD PASSPORT

			boiler and turbine operators and engineers.	
Livelihood of the poor			<p>Parameter: Poverty alleviation</p> <p>Chhattisgarh, where the plant is located, is one of the poorest state in India. About one third of Chhattisgarh's population lies below our extreme poverty line. 93% people are poor in Chhattisgarh</p> <p>The project generates additional employment (see above) and the sponge and iron plant within which the project is situated provides considerable benefits to local communities and farmers. For conservativeness this score is neutral.</p>	0
Access to affordable and clean energy services			<p>Change is supply or price of electricity</p> <p>Chhattisgarh is a state subject to power shortages and rural power cuts. By adding to local electricity the project will increase energy security.</p>	+
Human and institutional capacity			<p>Parameter: education and gender equality</p> <p>The project provides training for any new employees and recruits new employees in accordance to their qualifications, not gender.</p>	0
Quantitative employment			Parameter: Impact on number of new jobs	+

GOLD STANDARD PASSPORT

and income generation			The project creates additional jobs and income for the new employees. The impact on this indicator therefore is positive.	
Balance of payments and investment			Parameter: Impact in net imports/inward investment The project activity leads to reduction in fossil fuel consumption for electricity generation. A neutral score is chosen for an accurate assessment of this indicator.	0
Technology transfer and technological self-reliance			The project increases the efficiency of electricity generation, energy and provides training in regards to the technology to the employees. For conservativeness, this indicator is scored 0.	0
Justification choices, data source and provision of references				
Air quality	Emissions from cofiring coal, biomass and sewage sludge, IEA 2010. http://www.iea-coal.org/documents/82507/7721/Emissions-from-cofiring-coal,-biomass-and-sewage-sludge-%28CCC/175%29			
Water quality and quantity	Consent to operate No.3309/TS/CECB/2014 Raipur dated 02/09/2014 Issued by Chhattisgarh Environment Conservation Board (State Pollution Control Board) (For Water)			
Other pollutants	Consent to operate No.3311/TS/CECB/2014 Raipur dated 02/09/2014 Issued by Chhattisgarh Environment Conservation Board (State Pollution Control Board) (For Air)			
Biodiversity	Project Plan			
Quality of employment	Project Plan			
Livelihood of the poor	Agricultural Efficiency and Productivity of Fringe of Raipur City, Chhattisgarh www.ijird.com/index.php/ijird/article/download/86723/66535			

GOLD STANDARD PASSPORT

Access to affordable and clean energy services	Rural Electrification in Chhattisgarh http://garv.gov.in/assets/uploads/reports/statesnaps/Chhattisgarh.pdf
Human and institutional capacity	Project Plan
Quantitative employment and income generation	Project Plan
Balance of payments and investment	Issues In India's Balance of Payments In Recent Past. Dr. Sanhita Athawale and Ms. Swati Shukla, 2013
Technology transfer and technological self-reliance	Project Plan

GOLD STANDARD PASSPORT

SECTION G. Sustainability Monitoring Plan

Copy Table for each indicator

No	1	
Indicator	Air quality	
Mitigation measure	Reduction of baseline SO ₂ and NO _x emissions: The Project, by replacing electricity from fossil fuel combustion and the related fuel consumption, reduces the baseline SO ₂ and NO _x emissions from electricity generation. The emission reductions of SO ₂ and NO _x will be calculated by multiplying net electricity generation from the project activity with SO ₂ and NO _x emission factors using publicly available information.	
<i>Repeat for each parameter</i>		
Chosen parameter	SO ₂ emissions NO _x emissions	
Current situation of parameter	Stack emissions at the site have been tested yearly since the project activity started operation. These stack emission level are in line with PCB requirements and illustrate that mitigation measures are sufficient	
Estimation of baseline situation of parameter	Taking publically available information, particulate emissions from coal generation are substantially higher than from rice husk. See: http://ijetmr.org/Publication/V2I1/IJETMR_V2I1T07.pdf	
Future target for parameter	To reduce SO ₂ and NO _x emissions in India by displacing fossil fuel generated electricity with electricity from the project activity, thereby contributing to improved air quality.	
Way of monitoring	How	PCB requirements (National Ambient Air Quality Standards by Central Pollution Control Board Notification No. B-29016/20/90/PCI-I.
	When	Once per year
	By who	Project owner

No	2	
Indicator	Quantitative employment and income generation	
Mitigation measure	N/A	
<i>Repeat for each parameter</i>		
Chosen parameter	Employment creation/household income	
Current situation of parameter	Both long term and short-term jobs have been created during the operation process.	

GOLD STANDARD PASSPORT

Estimation of baseline situation of parameter		No new jobs were created as the project activity didn't exist
Future target for parameter		The number of jobs and income will be increased
Way of monitoring	How	Through the evaluation of documents for wages paid and social security documents
	When	Once per year
	By who	Project owner

No	3	
Indicator	Water quality and quantity	
Mitigation measure	<ul style="list-style-type: none"> PCB requirements (All parameters will be observed as per The Environment (Protection) Rules, 1986) 	
<i>Repeat for each parameter</i>		
Chosen parameter	<ul style="list-style-type: none"> Contamination of public resources COD 	
Current situation of parameter	No water discharge outside the plant area. Kharun River water is being used and found water quality as per norms	
Estimation of baseline situation of parameter		
Future target for parameter	Water quality is up to the national standard (pollution control board- Environment (Protection) Rules, 1986)	
Way of monitoring	How	Water quality examination
	When	Once per year
	By who	Project owner

No	4	
Indicator	Livelihood of the poor	
Mitigation measure	By providing employment (Direct & Indirect)	
<i>Repeat for each parameter</i>		
Chosen parameter	Number of people employed and other employment opportunities created in unskilled jobs.	
Current situation of parameter	Unskilled employs are dependent upon daily wage jobs.	
Estimation of baseline situation of parameter	People were unemployed and were dependent on traditionally agriculture crop	
Future target for parameter	Hiring of skilled and unskilled personnel in the plant and providing them wages as per government norms	
Way of monitoring	How	Employment training records
	When	Once per year
	By who	Project owner

Additional remarks monitoring

GOLD STANDARD PASSPORT

SECTION H. Additionality and conservativeness



This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

H.1. Additionality

In line with attachment A to appendix B of the simplified M&P for small-scale CDM project activities, demonstration of additionality focuses on the barriers facing the project - investment barriers and an analysis of prevailing practice in the state. In showing that the project is additional we demonstrate that it is not part of the baseline scenario, which in the case of the project activity is that the grid continues to operate and expand based on predominantly fossil fuel generation.

The main barrier to the project activity is the return on investment and the following highlights the result of the financial analysis of the project. All assumptions inherent in the financial analysis will be made available to the DOE but the following is a summary of the main points and results which demonstrate the importance of CER revenue.

The price of electricity is taken from the power purchase agreement (PPA) which was issued by the Chhattisgarh State Electricity Regulatory Commission (CSERC) to the project activity. This has been the main barrier in the project activity as the project proponents requested a tariff of Rs 3.20/kWh with an annual escalation of 5% but a tariff of Rs 2.79/kWh for the first year of operation (with 2% escalation in each subsequent year) was initially granted through the state electricity regulatory commission². The financial analysis undertaken was based on the above price of electricity. However, the price of electricity from biomass based power plants is dependent on the year of commissioning and whilst the project was expected to be commissioned in 2007/08 financial year this has slipped to 2008/09 and therefore a revised tariff rate of Rs 2.85/kWh is likely to be applicable but has not yet been confirmed by the CSEB³. However, as demonstrated below, the project IRR still does not improve substantially based on this new electricity tariff and the project IRR without CDM revenues continues to remain below the chosen benchmark.

The revenue streams associated with the project are only the sale of electricity to the grid and

² As per CSERC tariff order date 11/11/2005. In line with the same, a board resolution was passed in October 2005 indicating that the project required CDM funding in order to be financially viable.

³ However it should be recognized that it was always the intention of the plant to commission in the 2007/08 financial year and this is evidenced from the boiler and turbine orders which detail commissioning dates for the suppliers (clause 4 and clause 5 respectively) and the penalties that will come into force if these are not met.

GOLD STANDARD PASSPORT

the CERs resulting from registering the project as a CDM. In calculating the electricity revenues we have included the increase in generation of the existing turbine generators due to the steam that will be fed to these from the newly installed boiler, this will allow for a further increase in exports of 4MW and hence the revenues from these units have been included (the price for this electricity will not however be the preferential renewable energy tariff as the CSEB has only granted 8MW of power under the preferential tariff order and also no CERs are claimed for the electricity generated by these units).

The price of rice husk is another barrier as this price varies significantly due to variation in the transportation and collection costs and the seasonal nature of the product. The project activity has incorporated a cost of rice husk of Rs 1,200/tonne which is escalated by 5% each year until year 7 and then remains constant (this matches the period of escalation in the tariff).

The other costs have been included under O&M charges and interest on working capital. The interest on the working capital is based on a working capital requirement of Rs 8.8m in the first year, Rs 10m in the second year and Rs 10.5m thereafter. The O&M costs are detailed in the following table and set out in the spreadsheet, to these we apply an annual escalation of 5% which is below the current rates of inflation and hence conservative.

O&M costs		
	Rate	Rs 1000
O&M cost on plant, machinery, erection and instruments	4%	13,504
Maintenance on buildings	1%	200
Miscellaneous fixed assets	2.5%	278
Insurance on fixed assets	0.5%	1,962
Total		15,944

In line with the accepted guidance we have adopted a period of the analysis of 20 years. Analysing the project IRR in the light of these revenues and costs we initially arrived at a project IRR of 9.42% without CER revenues and 14.94% when the expected CER revenues were included. However, the new tariff structure for electricity (Rs 2.85/kWh) results in a project IRR of 10.36% without CER revenues. The details are available in the spreadsheets submitted to the DOE.

The project IRR can be compared with the cost of financing which has been taken from the prime lending rate (PLR) in India (the rate at which banks are willing to lend at). PLRs are published in India on the Reserve Bank of India website and the range quoted at the time of financial closure⁴ was 12.25% to 12.50%⁵. To remain conservative the project proponents

⁴ Referring back to response to request for review, the PLR prevailing during the start date was 10.75%-11.25% which is still higher than the project IRR of 9.42%

<http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/72490.pdf>

⁵ <http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/76703.pdf>

GOLD STANDARD PASSPORT

have not applied a country risk premium over the PLR which was quoted at 3% as per OECD guidelines⁶. The benchmark is thus derived as 12.25% for the project activity. This shows that the project IRR without CDM is not financially attractive (in either of the two tariff scenarios) and the returns of the project are favourable only after considering the revenues obtained from CDM.

To provide an idea of prevailing practice in the state, there are eighteen biomass based projects of a similar scale as the project activity which have been commissioned within the state. The complete list is as follows:

Sr no	Name of project	Capacity	Commi ssioned	CDM
1	M/s Kalindi Power & Steel Ltd	8 MW	Y	Y (registered)
2	M/s Ind Power Ltd	10 MW	Y	Y (registered)
3	M/s Rukmani Power and Steel Limited	10 MW	Y	Y (registered)
4	M/s Agrawal Oil Extractions Limited	8.5 MW	Y	Y (registered)
5	M/s Shivalik Power and Steel Limited	8.5 MW	Y	Y (registered)
6	M/s Lahari Power and Steel Limited	9.8 MW	Y	Y (registered)
7	M/s RR Energy Pvt Limited	14 MW	Y	Y (registered)
8	M/s Vandana Vidhyut Limited	7.7 MW	Y	Y (registered)
9	M/s South India Agro Industries Limited	9.8 MW	Y	Y (under validation)
10	M/s Hanuman Agro Industries Limited	2.5 MW	Y	Y (under validation)
11	M/s Raypati Power Generation Pvt Limited	7.5 MW	Y	Y (under validation)
12	M/s Neeraj Power Pvt Limited	7.5 MW	Y	Y (under validation)
13	M/s. Sudha Agro Oil & Chemical Industries Pvt Limited	9.99 MW	Y	Y (under validation)
14	M/s Mahavir Energy and Coal Bebenification Ltd	12 MW	Y	Y (under validation)
15	M/s. Maa Usha Urja Ltd	7.5 MW	Y	Y(registered) Y(Host country approval obtained)
16	M/s NRI Power & Steel Pvt. Ltd	7.5 MW	Y	Y(registered)
17	M/s. ISA Power Pvt Ltd	8 MW	Y	Y(registered)
18	M/s. Ecofren Power & Projects Limited	8 MW	Y	Y(registered)

Furthermore, there are two more biomass based power plants commissioned within the state i.e. M/s Indo Lahri Bio Power Project and M/s Rajaram Maize Products project. The Indo Lahri plant started in the 1990s and therefore does not qualify as a CDM whilst the Rajaram Maize project has a capacity of 1.5 MW and hence cannot be considered similar to the project activity.

It is therefore clear that CDM has played an important role in the successful commissioning of all the biomass based power projects in the state.

⁶ <http://www.oecd.org/dataoecd/9/12/35483246.pdf>

GOLD STANDARD PASSPORT

H.2. Conservativeness

This Project abides by the Gold Standard conservativeness principle through the following:

- Adoption of the recent versions of the UNFCCC baseline and monitoring methodologies and relevant tools and guidance for the estimation of emission reductions by the Programme
- Analysis of the Program sustainability matrix based on referenced information and third party opinion

GOLD STANDARD PASSPORT

ANNEX 1 ODA declaration

Project financing for this project activity will not use Official Development Assistance (ODA) Funds as defined in the Gold Standard Toolkit. There are no loans or grants being provided by International Finance Institutions, which include ODA.